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SENSATION AND SYSTEM

By E. B. TITCHENER

Zeller remarked long ago that "the sole instruments of science are observation and logic," and Armstrong told us the other day that "true science rests wholly upon fact and upon logic."¹ These statements mean, I suppose, that in any system of science as we have it at any particular time two factors are distinguishable: the facts, the data of observation, which are obtained by the methods peculiar to the science in question; and the scaffolding of system, which is obtained by the logical method of reflection. The formulas err, no doubt, on the side of simplicity; but they are right in spirit, even if they need amendment in the letter. A system of science, considered apart from the facts which it embraces, is in reality a complex argument, and like all argument invites discussion.

In a recently published monograph² Rahn has passed in critical review certain of the current systems of psychology. He has devoted a good deal of space to an examination of my own attempts to bring our observational data into order. I am interested, of course, in what he has said, and I am grateful for the consideration that he has given me; I only wish that I could now take his criticism, so to say, on its merits, and (so far as I might be able) discuss his objections within a single perspective. That would be the natural procedure; but it is impossible for the reason that, while the monograph is dated December, 1913, the latest of my writings to which it makes reference is the *Text-book* of 1910.³ There may easily have been circumstances, beyond the writer's control, that caused a delay in publication; but the delay is, so far as I am concerned, doubly unfortunate: first because I have published since 1910 several articles that bear upon questions of system; and secondly because a text-book (and the *Text-book* is most frequently cited) is written for the student and not for the professional psychologist, whereas a scientific article hopes to meet the critical eye. Unless, then, I am to say over again a good deal that has already been said in print, and am to spend time upon changes and corrections that are merely verbal, I

¹ E. Zeller, in Prutz' *Deutsches Museum*, no. 11, 15 März, 1855; H. E. Armstrong, in *Nature*, Oct. 22, 1914, 215.

² C. Rahn, *The Relation of Sensation to Other Categories in Contemporary Psychology: a Study in the Psychology of Thinking*, *Psych. Rev. Mon. Suppl.*, xvi., Decr., 1913, no. 67.

³ Nothing is said of a delay of publication in the author's Preface, and the list of References (128ff.) gives, curiously enough, only a few scattered dates.

cannot deal with Rahn's commentary as a whole.⁴ I regret this limitation all the more since he writes in a sober and objective way.⁵

I begin—to make these remarks as coherent as may be—with a word about the sensation of classification and the sensation of observation. Sensation is a classificatory term. We get our first notion of it, probably, from a common-sense differentiation of the principal organs of sense; sensations come to us from the eye, from the ear, from the skin. We get our systematic notion of it, I believe, as the outcome of abstractive analyses performed under various psychological determinations; in other words,—while the common-sense notion, colored very likely by biology or physiology, is always with us,—we build up the notion of sensation, in a strict procedure, from observations of its empirical aspects or attributes.

Rahn, now, holds the opinion, which to me is strange, that the sensation of psychological classification may be observed (or, at any rate, ought to be observable), introspectively, all at once, in a single observation.⁶ In point of fact, however, all experimental investigations of sensation deal with attributes: with qualities, intensities, durations, what not. Even the sensation of Wundt's system, which is constituted solely of quality and intensity, is to be observed under its

⁴ Thus, I have discussed the psychological *process* (Rahn, 20-22) in this JOURNAL, xxiii., 1912, 497f.; the introspection of *clearness* (Rahn, 34f.) in *Journ. Phil. Psych. Sci. Meth.*, vii., 1910 (!), 180ff.; the psychology of *meaning* (Rahn, 48) in this JOURNAL, 1912, 165ff.; the psychological *purpose* (Rahn, 65) *ibid.*, 490ff. It is not to be expected that Rahn's criticisms and my own efforts at construction should tally point for point; but my attitude, *e. g.*, to his Section xviii. ("The Differentiation of 'Stimulus' and 'Meaning' Aspects of Percepts and Ideas") may readily be gathered from my paper in this JOURNAL.

⁵ On one occasion too soberly! In *Feeling and Attention* (211) I quote Wundt on the distinction of intensity and clearness. "The citation from Wundt is correct; not so the interpretation that Titchener puts upon it. . . . In the very context from which Titchener takes the quotation, Wundt repudiates the interpretation that is put upon it" (Rahn, 17f.). But I supposed that everybody knew Wundt's doctrine; if anyone did not, I had stated it correctly earlier in *Feeling and Attention* (183: Rahn must have missed this passage); I showed by omission-marks that I was quoting only in part; and even so I could not avoid the fatal word *Eindruck*, which is not a Wundtian equivalent for *Empfindung*. What I meant as a mild literary joke—it is somewhat trying to have to explain!—has been taken by Rahn *au grand sérieux*.

There is another criticism which gives me, perhaps, some ground of complaint. I say that "the method of the physical and the psychological sciences is substantially the same" (*Text-book*, 24); and Rahn rebukes me on behalf of feeling (44; cf. 35). But I am not 'hedging' on that score; I expressly deal with the introspection of emotions on 472f.—a passage that Rahn has again missed, though it is separately indexed. I qualify because "the time is not yet ripe for a point-by-point comparison of the methods" (this JOURNAL, xxiii., 1912, 488; cf. the whole section, 485ff.).

⁶ *Op. cit.*, 31, 55ff., 76ff., 106ff.

two attributes in separate experiments.⁷ But be that as it may, I should certainly maintain in my own case that a sensation, taken in this way as a psychological object of the first order, must ordinarily, by the number and heterogeneity of its attributes, exceed what is called the 'range of attention.' Theoretically, there will be limiting cases: the one, in which the focal attribute is so exceedingly clear that the marginal attributes, correspondingly obscure, are observationally subliminal and touch off no report at all; the other, in which the main levels of consciousness are so nearly at one level that all the attributes touch off reports and all reports are practically alike in fullness of detail. I do not now discuss the question how nearly we are able, in the concrete case, to approach these limits. But I am sure that, in the very large majority of observations, some attribute or attributes will be definitely focal and others as definitely marginal.

It thus appears that Rahn's "anomalous case"⁸ is, to my thinking, entirely normal. All observation of psychological objects of the first order is, I conceive, observation of attributes. If, then, we reduce consciousness to a single sensation,—as for the sake of argument we may be allowed to do,—and set to work to 'observe' this 'sensation,' we shall naturally (as I have just said) have some attribute, simple or compound, or some partial group of attributes, as focal, and other attributes as marginal. But this spreading out of a single sensation into coextension with consciousness, for the purposes of observation, does not mean that the sensation of our classificatory list should have two simultaneous clearnesses, a relatively high and a relatively low, or that clearness itself is an attribute of attributes and not an attribute of sensation. I am accustomed to think of the phase of excitation that corresponds with clearness of sensation as the release of a relatively constant amount of energy, the greater part of which flows freely in the course favored by determination, while the remainder flows less freely in the other, associated courses of the excitatory system. That may be mere figure of speech; but it helps us with our present puzzle. For the clearness that attaches to the sensation of our example is the total clearness of the consciousness which that sensation 'fills.' The current doctrine of attention, reinforced by common sense, leads us to emphasize the 'high light' and neglect the 'low light' of consciousness; and yet the total 'attention' that we are 'giving' at any moment is the sum of the two. The fact that every consciousness is patterned into relatively clear and relatively obscure is, to be sure, a fact which demands its own explanation. But it follows from this fact that, if a consciousness is composed of a single elementary process, some of the aspects of the process will be clear and others obscure; which clear and which obscure, is a matter of determination. All the clearness is, in this case, the clearness of the one process (as in more complex cases it is not); and the distribution of clearness, under a general law of consciousness, does not make it into two clearnesses. If, then, we may speak observationally of the 'clearness of a quality' and the

⁷ Wundt makes the intensity and quality of pure sensation "jedes ein für sich bestehendes Object psychischer Messung," and bids us, in our search for the mental elements, look for irreducible and invariable 'quality': *Logik*, etc., ii., 2, 1895, 179f., 198. Yet it is the sensation, and not the intensity or quality, that is for Wundt the mental element.

⁸ *Op. cit.*, 29.

'obscurity of an intensity' (and we might with the same right speak of the quality of an intensity, or of the quality or intensity of a particular degree of clearness), that manner of speaking does not at all commit us to a classification; the logical status of clearness, in relation to sensation, depends upon our rationalisation of all the observed facts. For, to repeat, the sensation of classification is the logical resultant of many observations. Its qualitative attributes are (in the typical case) points selected by definite procedure from a continuum; its intensive attributes are themselves continua, reduced by the same procedure to a series of points. Hence the conjunction of the qualitative attributes with any points whatsoever upon the correlated intensive scales constitutes, for classification, 'a' sensation; the bracketing together of the qualitative attributes with the complete intensive scales constitutes 'the' sensation.⁹ It would be a great simplification of psychology if a sensation, *tota, teres, atque rotunda*, would stand before us under a single comprehensive determination and allow us adequately to observe it as a whole. But that, if it ever happens, happens only after we have made many separate observations of its distinguishable aspects.

Observation is, in fact, conditioned upon two things, peripheral reception and central disposition,—conditioned, as I have put it, upon excitation and determination. We group certain attributes together, in our classification, because, having observed one attribute under a certain determination, we thereafter invariably light upon certain other attributes when, with shift of determination but with excitation unchanged, we undertake to observe them. If, for instance, we have observed a hue, we can always and without exception, under the same conditions of excitation and with fitting determination in each case, observe a tint and a chroma; while we cannot by any kind or force of determination observe a sour or a warm.¹⁰ We regard the attributes as constitutive, again, because the grouping or clustering is thus invariable; a hue that should present itself alone, that should confront us with a blank nothingness when we looked for tint or chroma, is unknown; where there is no observable tint or chroma, there is also no observable hue. In logical terms, the reduction to zero of any member of the attributive group destroys the whole process of sensation. And lastly, we give excitation the logical preference over determination, and take the 'sensation' rather than the 'attribute' as our mental element, because change of determination is limited in its effect to the unravelling of the groups or clusters already referred to; because, in other words, it shows us nothing more than the inseparable aspects of some simplest item of our subject-matter; whereas shift of excitation brings in new matter. We cannot

⁹ I am not sure that Rahn is right in denying (as he seems to do: *op. cit.*, 27, 57) the intrinsic difference between qualitative and intensive attributes. In any event, the systematist is justified in making quality the basis of his classification, simply by the fact that qualities have received a goodly number of specific names. It would be absurd to throw away this logical advantage, even if the formal definitions of quality and intensity are (as to my knowledge they are not yet) reducible to identical terms.

¹⁰ I have written elsewhere of psychological determination, and will here simply remind the reader that it need not always be definite, formulable in terms of the known, but may also be indefinite, a determination to look for 'something else of a qualitative sort' or even just to look for 'something different.'

pass, by mere shift of determination, from a hue to a sour; but by mere shift of excitation we may pass from hue to any other sensory quality that there may be. So the chemist (I take an instance at random from Jevons, though Rahn objects to chemical analogies) lists the alkaline metals as elements, and lists as their characters softness, fusibility, volatility at high temperatures, power to combine with oxygen, power to decompose water, and so forth. All analogies halt; but the point here is plain. The chemist, in observations of the first order, will always be experimenting upon softness or fusibility or some such character; and it is not likely that any single experiment will bring out all the characters at once. But he is still experimenting with a metal; the simplest item of his empirical subject-matter, the simplest object or phenomenon of his science, is in this particular chapter of his classification a metal. Hence metals figure as one group of the chemical elements, and the alkaline metals as a sub-group of the metals.¹¹

Observation, however, is not confined to objects of the first order. Just as an ornithologist will identify, by species, sex and age, a bird that he has caught a mere glimpse of, on some excursion in the field, so may the psychological observer identify a mental process, elementary or complex, that he has previously made the subject of detailed attributive observation. When an observer who is discriminating tones reports 'kinaesthetic sensations,' the report does not mean that he can give, from his present experience, a precise description, qualitative, intensive, temporal, and so forth, of these sensations; it means simply that he has recognized certain items of experience, immediately, as 'kinaesthetic sensations,' in the way that the ornithologist recognizes his red-eyed vireo. From this point of view, the 'form' of a visual perception may, without any difficulty, become the observed 'content' of an experimental consciousness,¹² or a 'conscious attitude' may be reported as such; only, from the same point of view, we have no psychology of visual perception or of conscious attitude until we have analyzed it into its constituent processes and have brought these simpler processes under the terms of our ultimate classification. The difference between the common-sense and the psychological observation of (for example) visual form is in the first place a difference between the existential determination of science and the interpretative of everyday life, and secondly just this difference of ability or inability to reduce experience to its lowest observational terms.

Rahn makes a great deal, in this connection, of Külpe's experiments on abstraction. Let me remind the reader of the circumstances. In those experiments, a complex visual field was exposed for an eighth of a second. The field comprised four meaningless syllables, which were colored respectively red, green, violet, and black or grey. The syllables were composed each of two consonants and a vowel; no syllable was used twice in the experiment; and the vowels differed at any rate within a given field. The order of the colors, and the arrangement of the syllables themselves, varied from observation to

¹¹Rahn, *op. cit.*, 25; W. S. Jevons, *The Principles of Science*, etc., 1900, 675.

¹²*Op. cit.*, 84ff., 89. I need not remind the reader that the nature of the datum of observation, in this instance, is in dispute. I am not here concerned, however, with 'form of combination' in any but an illustrative way.

observation. Five kinds of instruction were employed; the observer was directed (1) to note (*bestimmen*) the total number of visible letters (number), (2) to note the colors and their approximate position in the field (color), (3) to note the form which the syllables outlined (form), (4) to note as many individual letters as possible with their approximate position (elements), or (5) simply to observe. Külpe found—I take his extreme case—that under the instruction for form no report at all might be obtainable of color or elements. “The observers believed . . . that they had not, as a matter of fact, perceived any color, any object, etc.” From results of this sort far-reaching conclusions are drawn—as regards sensation! “Since psychology as science ascribes uniformly determinate attributes to sensations, regards them as constituted of determinate partial contents, it follows that psychology distinguishes between psychical processes and the consciousness of such processes.”

Here, then, is a highly complex visual ‘stimulus,’ presented tachistoscopically, and observed under cognitive instruction. For number, form, position and letter-element, whatever they may be, are certainly not sensations; and though the observers may have shifted to an existential attitude under the instruction for color, the probability is that they did not. Suppose, now, that under the instruction for form an observer has reported ‘diamond,’ and that he is able to say nothing when questioned regarding color and elements. What precisely, in the case of color, does this ‘nothing’ mean? It is hardly likely that the form was so bare, so disembodied, that it might have been, indifferently, a visual or a tactual form. We assume that it was perceived as a visual form, and might have been so reported. But then is it not reasonable to suppose, further, that it could have been reported as dark on light, or darker on lighter? For the stimulus is always projected upon the bright disc of the lantern-screen; a form that is made out at all must be made out upon this light background; can it be imagined that an observer, under the instruction for form, would be wholly unable to say whether the form glowed with a brighter light or stood out as darker upon the light surface? But dark and light are qualitative terms, and Külpe’s ‘color’ included black and grey. Let us turn, however, to the letter-elements. “The observer may be able correctly to describe a *form*, without having experienced anything whatever directly in *consciousness* in regard to the nature (*Beschaffenheit*) of the objects which delimited it.” What again, precisely, does the ‘nothing whatever’ mean? Under the instruction for elements, the observer is to note as many individual letters as possible. Does the ‘nothing whatever’ simply mean, then, that the observer could not say whether the form was bounded by individual letters? that he could not identify any part of the boundary as a letter? Apparently. But he might still have been able to report whether the boundary was continuous or discrete, mottled or uniform, broad or narrow, straight or wavy; more especially, one would think, since the report of contents not favored by instruction was given “vielfach nur auf Grund von Reproduktionen;” and adjectives of this kind do, in a way and to a degree, characterize the limiting objects.

Külpe’s account is tantalizingly brief. But we get an idea of the complexity of the field from the remark of one observer that he had frequently seen (or been conscious of) more than he was afterwards able to report. We get an idea of the cognitive emphasis in the instruction from the remark of another observer that the process of

noting or specifying (*bestimmen*) seemed to be entirely separate from that of seeing. Külpe's own inference that the changes wrought by instruction are changes of *Auffassung* and not of *Empfindung* seems imperilled by his later statement that "die Versuchspersonen glaubten tatsächlich die Eindrücke in der angegebenen Unbestimmtheit zu *sehen*" (italics in original). But indeed the word *Empfindung* is sadly out of place in this context. Here are apprehension, identification, meaning, perception, reproduction; here, in other words, is observation solely of the higher orders. To argue from the introspective reports—by way of sensation!—to a rehabilitation of the 'inner sense,' and a distinction between conscious actuality and psychical reality, and a furtherance of the old dispute between nominalism and realism, is to erect a heavy superstructure of system upon curiously insufficient observational foundations.¹³

What it is, in observations of a higher order, that touches off the introspective report is a matter to be discovered by experiment in the particular case. I have not repeated Külpe's experiments, and therefore cannot—in this particular case—be specific.¹⁴ But I can now make a general statement which may be to Rahn's point. I spoke above of limiting cases in the observation of the sensation-consciousness, and I left them without discussion (p. 260). But I have no hesitation in saying that the realisation of the first limiting case has no terrors for me; and that certainly I should not be driven by it to a distinction of conscious actuality and psychical reality. There is no difficulty in conceiving an observer to be so completely under the influence of determination that the marginal attributes are too obscure to connect at all with the mechanism of report. Külpe remarks, and correctly, that "die Lücken im Protokoll erlauben nicht ohne weiteres den Schluss auf eine entsprechende Lücke im Bewusstsein der Versuchspersonen;" and it seems fair to suppose in our imaginary instance—just because that instance comes to us as a limiting case—that the margin was still 'there,' in consciousness, although it was so obscurely 'there' that it failed to touch off a verbal description. Might we not, from what we know of the pattern of consciousness, even predict, before the event, that once in a great while such cases will occur?

But the disagreement between Rahn and myself goes deeper, I am afraid, than this matter of classification, and of the relation of scientific system to scientific data. I cannot help thinking that he

¹³ O. Külpe, *Versuche über Abstraktion*, Bericht über den I. Kongress für experimentelle Psychologie in Giessen, 1904, 56ff. Rahn even translates *Beschaffenheit* (of the letter-element) by 'attributes,' as if the letter-element were a sensation: *op. cit.*, 78.

¹⁴ The instruction, as I have said, was cognitive; the observer was asked to note or determine or specify (*bestimmen*). It is fairly certain that, under this cognitive determination, something in the visual field, some phase of the complex 'stimulus,' actualized the 'meaning' of the instruction, which then touched off the report. The focus of consciousness would thus be held by processes correlated with the stimulus-phase and the meaning. It would probably not be easy, in the circumstances, to indicate all these processes; and it would probably be impossible to name their relevant attributes, and so to reduce the observation outright to that of an object of the first order. Külpe says (*op. cit.*, 66): "Die Durchführung der Aufgaben ist nicht näher zu beschreiben," 'cannot be described in detail.'

is still, as regards the psychology of sensation, held in the trammels of the older associationism. It would indeed be surprising, were it not so common, to note how the critic of current sensationalism persists in ascribing to sensation, almost as if by instinct, the characters which the associationist school attributed to idea. In the typical associationist system the idea was, first and foremost, a meaning; as a meaning, it was stable and permanent; and its association to other and similar ideas gave rise to all kinds of mental formation. We may insist, now, that meaning has been pared from sensation,—we may insist that meaning, from the psychological point of view, is in general something detachable, something that accrues, something variable and incidental; yet we cannot drive that point home; our critics still write as if sensation involved awareness. We may insist, again, that sensation is a process; we may give illustration, and try in all manner of ways to make clear what, in the psychological sense, a process is; we are told that the position is untenable and impossible, and that our sensory element must in reality be something fixed and static. We may insist that sensation is an analytical and not a genetic concept; and we are told, notwithstanding, that it is generative: not any more, perhaps, that it generates our perceptions,—that mistake one may hope never again to meet in such form that it need be taken seriously; but certainly that it ought to generate better than it does, that it is inadequate to our complexes. I say 'we insist,' because I am here outlining a position in dogmatic terms; in fact, of course, we argue from such evidence as we can bring forward. But the arguments and the evidence seem hardly to count; it is the position itself, if I am not mistaken, that is repugnant, that is instinctively rejected; a consideration of arguments and evidence—as distinct from a mere confrontation of system with system—would be very welcome. And the reason for the repugnance seems to lie in the carrying over into sensationalism of the doctrines of associationism.

Thus, at the very beginning of his enquiry, Rahn refers to "the structuralistic doctrine that under certain conditions we may become aware of redness and blueness."¹⁵ At first thought one would say that this is a common-sense rather than a psychological doctrine. But the context shows that Rahn looks upon 'awareness of redness and blueness' as a paraphrase of the structural term 'color sensation.' As well might one declare that 'awareness of fusibility' is a particular chemical element! The phrase, is, indeed, quite foreign to the structuralist's ways of thinking. He can 'observe a red,' and he can—like everybody else—'apprehend a meaning;' observation he will deal with under the heading of Method, and meaning he will deal with, from the point of view of analytical psychology, under its own heading. But he has nothing more to do with 'awareness' than has the chemist or the physicist or the biologist; and yet Rahn, without hesitation and in good faith, introduces the term into a passage that refers to structuralist doctrine! With this prepossession upon him, how shall the critic come to close quarters with the system he is criticizing?

As with meaning, so with process: "if the element is to be considered as a part, an irreducible ultimate content of consciousness, then it cannot at the same time be regarded as a process, for a

¹⁵ *Op cit.*, 3; cf. 60, 62, 78, etc. I do not see how the charges brought against me on 40, 94, are to be squared with the sentence from which I quote; but they are themselves met, I hope, by *Thought-processes* 60f. and *Text-book* 545.

process implies the interrelation of a number of elements or factors;" and so the poor element, in spite of protest, must remain "static."¹⁶ Naturally, if sensation is a meaning and consciousness is awareness! But might it not have occurred to Rahn that things are less simple than this? that, if his process is the resultant of several elements and mine requires but a single element, we may perhaps not define 'process' in the same way? And might it not have been both more effective and more profitable to understand my 'process' and wrestle with that than to substitute another kind of process for it?

Here are two of our associationist parallels, plainly drawn. As for the third, Rahn is clear of the cruder form of what I must call—from my own standpoint—the genetic fallacy; he by no means escapes it altogether. The "kinaesthetic sensations that attention lights upon, when it pounces upon such a subtle psychosis as a state of doubt, are not the psychic equivalents of the state itself."¹⁷ But, it seems to me, the task of psychology, over against the 'I doubt' which expresses some common-sense or logical determination of the organism, is precisely the task of analysis; and if analysis brings to light nothing else than kinaesthetic sensations, then these sensations (characterised as accurately as may be) are precisely the 'psychic equivalents' of the logical situation. Description of process is thus correlated with statement of meaning. If Rahn now replies—as he probably would—that innumerable analyses by the most competent observers would still fail to put him into what he regards as psychological possession of 'so subtle a psychosis,' I must repeat what I have said before: first, that a description, as compared with an intimation of meaning, is always clumsy and long-winded; but, secondly, that psychology—as I regard it—"is under no obligation to reconstitute, at the end of an investigation, the [continuum of] psychical experience; it is enough to have shown that its contributions to the analysis of that experience are valid."¹⁸ In other words, as I have also said elsewhere, a descriptive science may not justly be asked to give more than, by its nature as descriptive science, it can properly furnish.

James Mill, although he tries hard to make his readers get the qualitative 'feels' of the various sensations, can nevertheless speak of sensations of resistance, of hardness, of weight, of shape, of size, because the sensations are, for him, "the feelings from which we derive our notions of what we denominate the external world;" "it is acknowledged on all hands that we know nothing of objects, but the sensations we have from them;" "in using the names tree, horse, man, the names of what I call objects, I am referring, and can be referring, only to my own sensations."¹⁹ Mill, therefore, is perfectly logical in regarding a process as an affair of "certain steps," and in declaring that consciousness of change is "an essential part of the process" of sensation: "having *two* sensations is not only having sensation, but the only thing which can, in strictness, be called having sensation."²⁰ And Mill can undertake to resolve doubt—"a

¹⁶ *Op. cit.*, 21f., 67.

¹⁷ *Op. cit.*, 45.

¹⁸ This JOURNAL, xxiii., 1912, 166; *Thought-processes*, 1909, 284f.

¹⁹ *Analysis of the Phenomena of the Human Mind*, i., [1820] 1869, 58, 77, 79; 3; 349f.; 93; etc., etc. I refer to sensation, rather than to the more obvious idea, in order to bring out clearly the resemblance between Rahn and a representative member of the associationist school.

²⁰ *Op. cit.*, ii., 13f.; 11f. The whole section is significant.

phenomenon of some complexity, but of which the elements are not very difficult to trace"²¹—into 'psychic equivalents' that shall leave no remainder, because he is translating common sense into associationist terms and offering the result as psychological analysis. All this is intelligible enough; but it is not structural psychology.

There will probably be no end to the rivalry of psychological systems. A science is never finished; and as the data of observation multiply, the systematic argument must be changed and extended to cover them. That apart, psychology is hardly yet free from its traditional connection with philosophy, and psychologists are accordingly not yet at one even as regards the general type to which a system must conform. No more can be said, therefore, than that here, as everywhere, the system is subordinate to the data, and reflection secondary to observation. But it is well to keep this principle steadily in mind: for only in its light shall we apply the right test to our systems, the test of their ability to organise, consistently and exhaustively, such data as we have. If we thus become a little mistrustful of programmes, is there any harm?

²¹ *Op. cit.*, i., 270, 430.